

## DETAILED ACTION

### *Examiner's Comments*

An after-final amendment, amending claims 1, 3, 6-8, 10 and 12-14, was received and entered on 5/24/10.

### *Allowable Subject Matter*

1. Claims 1, 3, 6-8 and 10-15 are allowed.
2. The following is a statement of reasons for the indication of allowable subject matter:

Kolla et al. (Chromatographia, 23, 7, pp. 465-472) teaches a method of producing a cation exchange film for use in chromatography (Abst.) comprising the steps of coating a silica particle with a diameter of 5  $\mu\text{m}$  with poly(butadiene-maleic acid) ("PBDMA"), placing the coated particles in a solvent containing dicumylperoxide and crosslinking the particles in the solution by reacting the particles with the incorporated peroxide (p. 466, Col. 1). Kolla, however, teaches that the coated particles are extracted from the solvent prior to cross-linking.

Gordon et al. (US 4,507,411) teaches that it is known in the art to cross-link maleinised polybutadiene in the presence of alcohol (1:10-13) and that the particles are placed in toluene (claimed "solvent") (2:34-49).

However, Kolla and Gordon, individually or taken in combination, fail to fairly teach or suggest that the polymer is reacted with (or that the solvent contains) an alpha-beta-unsaturated diacid derivative. The two closest prior art references also fail to teach this limitation. Yang et al. (Talanta 55, pp. 1091-96) teaches a method of forming a cation exchanger where silica particles are coated with MVDS and reacted with maleic anhydride to form a polymeric coating, but fails to teach that the silica particles are first coated with a polymer having a double bond. Tokuda et al. (JP 05-096184) teaches an improvement over the Kolla method, but only teaches that dicarboxylic acid is added to the film after the film has been formed and placed in the chromatographic apparatus and does not teach that any diacid derivative is present in the cross-linking solvent. None of these references, individually or taken as a whole, fairly teach or suggest the deficiencies of Kolla.

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***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT VETERE whose telephone number is (571)270-1864. The examiner can normally be reached on Mon-Fri 9-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland can be reached on 571-272-1418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Robert Vetere/  
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